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ABSTRACT

The study evaluates the influence of time devoted to reading-related classroom experiences on reading achievement for first grade children with lower versus higher IQ scores. Initially, it was anticipated that lower IQ children in classrooms with more time allocated to reading-related activities would make greater gains in word decoding skill than their low IQ peers in classrooms with less time allocated. The results led to a refinement of the initial hypothesis. Based on preliminary analyses, a model of reading instruction was developed that distinguishes time devoted to teacher-directed activities from time spent in child-directed activities (primarily silent sustained reading). Each type of reading experience had significant effects on growth in word decoding skill for first grade children, but these effects were not evenly distributed by IQ group. In fact, the results suggest that child-directed activities, the predominant type of reading experience (at least in the school district studied), differentially contributed to the growth in word decoding skill for high IQ children. Teacher-directed activities, by contrast, had markedly greater effects on low IQ children's growth in word decoding skill. (Contains 12 references, 6 tables and 2 figures of data.) (Author/RS)

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Running Head: INSTRUCTIONAL INFLUENCES ON READING

Narrowing the gap in reading: Instructional promise and peril

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Abstract

This study evaluates the influence of time devoted to reading-related classroom experiences on reading achievement for first grade children with lower versus higher IQ scores. Initially, it was anticipated that lower IQ children in classrooms with more time allocated to reading-related activities would make greater gains in word decoding skill than their low IQ peers in classrooms with less time allocated.

As the analyses will show, the results led to a refinement of the initial hypothesis. Based on preliminary analyses, a model of reading instruction was developed that distinguishes time devoted to teacher-directed activities from time spent in child-directed activities (primarily silent sustained reading). Each type of reading experience had significant effects on growth in word decoding skill for first grade children, but these effects were not evenly distrubuted by IQ group. In fact, the results suggest that child-directed activities, the predominant type of reading experience (at least in the school district studied), differentially contributed to the growth in word decoding skill for high IQ children. Teacher-directed activities, by contrast, had markedly greater effects on low IQ children's growth in word decoding skill.

Narrowing the gap in reading: Instructional promise and peril

It is no secret that vast numbers of American children are poor readers. A recent national study reports that 38% of our nation's fourth grade children are reading well below grade level and another 32% demonstrate only partial mastery of skills necessary for proficient grade level work (U.S. Dept of Education, 1999). The longstanding challenge to educators and educational researchers alike is to determine the root of the failure in order to correct it.

Formal reading instruction typically begins in first grade, building on the various pre-reading activities emphasized in kindergarten, such as alphabet recognition and letter sound correspondence. The foundation for reading continues to be laid in first grade, with instruction largely aimed at developing children's ability to decode words --- in later grades, the emphasis shifts to more complex reading endeavors, such as comprehension. The manner in which reading instruction is delivered varies widely (e.g., Evans, 1985; Juel and Minden-Cupp, 1998). Children might participate in small ability-based activities, whole-class skill-oriented instruction, and independent reading. Some teachers adopt the whole-language approach, other teachers are committed to phonics-based instruction, and many teachers mix the two. Decades of research attempting to determine the "best" method for teaching children to read has yet to offer a simple solution (Adams, 1990). Perhaps there is no single best method to meet the needs of every child.

In addition to variation in the type of instruction, there is large variation across classrooms in the amount of time devoted to reading-related activities in the first grade (e.g., Frese, 2000). Frese (2000) reported that more time was spent in first grade on reading-related

activities than on any other subject area. She further reported that there was significant variability between the 27 first grade classrooms in her study. Specifically, some first grade children received on average 40 minutes of reading-related instruction per day, while others received 100 minutes. By the end of the school year, some children had received 180 hours more reading experience than their peers. If something as simple as the amount of instruction is related to the development of literacy skills, there could be grave consequences to these discrepant figures.

There is some evidence indicating that the amount of instruction does influence literacy skill development. Williams (2000) reported that first grade children outperformed their same-aged kindergarten peers in word-decoding and phonemic segmentation tasks as a result of an increase in the amount of reading-related instruction from kindergarten to first grade.

In addition to variability in the amount of instruction and variation in the type of instruction, there is variability among children. In fact, part of the challenge of teaching reading is that classrooms are inhabited by children presenting an enormous range in literacy skills (e.g., Alexander & Entwisle, 1988; Morrison, Griffith, Williamson, & Hardway, 1995). For example, a recent study by Morrison and his colleagues reported that kindergartners started school with receptive vocabulary age equivalent scores that ranged from 1 year 9 months to 9 years 4 months -- almost an 8 year difference (Morrison, Griffith, Williamson, & Hardway, 1995). Further, the difference was reported to persist through second grade.

Extrapolating from the findings that the amount of instruction influences literacy skill growth, one might reason that children presenting lower levels of literacy skill development would require more instruction than their peers presenting higher skill levels.

This study set out to address the question of whether the amount of time devoted to reading-related instruction similarly influences all children's growth in word-decoding skills or if there are differential effects dependent on the characteristics and skills the child presents.

Method

Ninety-two first grade children[1] (42% girls; 62% White and 38% African American) were individually administered an abbreviated battery of the Stanford-Binet Intelligence Scale (Thorndike, Hagen, & Sattler, 1986) in the fall of the school year and a test of word decoding skill (PIAT-R, Markwardt, 1989) in the fall and spring. Parents provided information about their own educational background, their child's race or ethnicity, and answered questions about their "home literacy environment" (such as, how many books does your child own, and how often does someone read to your child at home) (Griffin and Morrison, 1997).

Three full-day observations (one each in fall, winter and spring) were completed for each of the classrooms in which a participating child was enrolled. Briefly, observers produced narrative records of the classroom activities and recorded the number of minutes devoted to each distinct activity (for more details, see Griffin, 2000). Inter-observer reliability was determined to be 95% for both narrative and time. Observation protocols were subsequently coded using a detailed coding scheme consisting of 93 activities to which each minute of the school day was assigned. Inter-coder reliability was established to be 86% (that is, on average, 86% of the time was categorized identically by the two coders).

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[1] The children in the present study were part of a larger sample participating in a study examining the relative effects of age and schooling on literacy development. Three cohorts are represented: children who entered first grade during 1996-97, 1997-98 or 1998-99.

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Thirteen of the 93 sub-activities were used in the present study because they were believed to represent experiences that explicitly focused on the development of word-decoding skill (Table 1). Included were experiences such as student read aloud, silent sustained reading, and word segmentation.

Results

In order to examine the influence of time devoted to reading-related classroom experiences on the growth of word-decoding skill in children of different ability levels, two groups were created using median IQ (median=101) as the criterion cutoff. Table 2 presents background characteristics of these two groups (46 children per group) and the results of mean comparisons on these characteristics. The two groups are distinct in a number of ways, including IQ, race and the home literacy environment.

Initially, it was hypothesized that children with lower IQs who were enrolled in classrooms that devoted more time to reading instruction would show greater growth in word decoding skill than their lower IQ peers who were in classrooms that devoted less time to reading instruction. That is, it was anticipated that analyses would show the amount of classroom experience to be a significant predictor for low IQ children. The influence of reading instruction on high IQ children was less clear; for example, one can imagine high IQ children being affected little by the amount of instruction because their skill level has already reached or exceeded the level offered in the classroom.

The hypothesis suggests that low and high IQ children will be differentially affected by

the amount of time devoted to reading instruction. Therefore separate regression analyses were conducted for each IQ group in order to examine the importance of amount of instruction to growth in word decoding skill.

Two forced entry regressions were performed, entering theoretically relevant background variables (including Fall word decoding skill level, IQ, race, gender, maternal education and home literacy environment) in the first step, and the classroom experience variable in the second step. To reiterate, the classroom experience variable was derived from observations and represents the average number of minutes per day devoted to activities that stimulate the development of word decoding skill. These activities included things such as student read aloud, silent sustained reading, and word-segmentation.

Results revealed that the amount of instruction, as conceived, did not play a role in the growth of word decoding skill; a trend did whereby greater amounts of instruction enhanced the growth of word decoding skill for the high IQ children (Table 3).

In reflecting on this unanticipated outcome, observers recalled how lower-skilled children spent their time during silent sustained reading and similar unstructured activities. Typically, the time was spent disengaged from any academic pursuits, and was spent instead appearing to find a book to read, or sharpening pencils, or even just sitting quietly with a closed book on their desks. Moreover, recently, Juel and Minden-Cupp (1998) suggested that different types of students are best served by different types of instruction. The original variable combined all reading-related activities, whether or not they were teacher-directed (e.g., word segmentation activities or spelling) or child-directed (e.g., sustained silent reading or independent writing).

Given the anecdotal reports and the empirical evidence, it became clear that a more fine-grained analysis of the influence of classroom experiences on literacy development was needed. Therefore, the classroom variable was reconceived to separate activities into teacher-directed and child-directed (Pearson's $r=-.40$, $p \leq .000$).

Child-directed activities (see Table 4) were those classroom experiences during which the child was primarily responsible for managing his or her own work. Included here were things such as silent sustained reading and independent writing. While there may have been some amount of time when the teacher managed the child's work, the majority of the time was child-managed. Conversely, teacher directed activities were those during which the teacher managed progress through the instructional experience. Included here were things such as choral student read aloud and teacher model writing. Again, there may have been some amount of child-managed time, but the majority was managed by the teacher.

This next level of analysis sought to determine whether differences in the type of reading experience (teacher-directed versus child directed) similarly influence all children's growth in word decoding skill, or whether there are differential effects for children presenting different skills. The two classroom experience variables were anticipated to differentially affect the development of word decoding skill for the two IQ groups. Specifically, for high IQ children, growth in word decoding skills would be enhanced by more time allotted for child-directed reading activities whereas for low IQ children, growth in word decoding skills would be enhanced by more time allotted for teacher-directed reading activities. It is reasonable to expect children who are readers to benefit from independent reading time, but it is questionable whether similar expectations can be held for children who are not readers or who are poor readers.

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Further, these non- or poor readers should benefit more from teacher-led instruction in reading than from independent reading.

The same analytic strategy used to assess the initial hypothesis was used. Four forced-entry regressions were conducted, one for each IQ group for each classroom experience variable. Background variables were entered as a block in the first step, followed by the classroom experience variable.

Results from these analyses revealed that high IQ children demonstrated greater growth in word decoding skills when they were in classrooms that provided more time for child-directed reading-related experiences (Table 5); child-directed classroom activities accounted for 7% of the variance in word decoding skill growth. Teacher-directed activities did not account for a significant amount of the variance for these children.

The opposite pattern emerged for the low IQ children (Table 6). Low IQ children showed greater growth in word decoding skills when they were in classrooms with more time devoted to teacher-directed reading-related activities; teacher-directed classroom activities accounted for 4% of the variance in word decoding skill growth. Child-directed activities did not account for a significant amount of the variance for these children.

Figure 1 shows the contrasting growth patterns for the two groups for teacher-directed reading related experiences. As the amount of time spent in teacher directed activities increased, growth in the word decoding skills was enhanced for low IQ children; conversely, growth in the word decoding skills was depressed for high IQ children as the amount of time devoted to teacher-directed activities increased.

As you would expect, the opposite pattern appears for child-directed activities. (Figure 2). The more time teachers devoted to child-directed activities, the greater the growth of word decoding skill for high IQ children. In contrast, low IQ children's growth was diminished as the amount of time devoted to child-directed activities increased.

Discussion

On average, the first grade teachers in this study allowed a total of 67 minutes per day for reading-related activities. Seventy-one percent of this time (on average, 48 minutes) was allotted for child-directed activities. This preponderance of child-directed activities may explain the initial trend wherein the amount of reading-related instruction, as conceived more generally, enhanced the growth of word decoding skill for high IQ children. Clearly, if this practice continues, the high IQ children who reaped the benefits of child-directed reading-related experiences will continue to be advantaged.

In classrooms across the country, elementary school children are given time each school day to engage in silent reading and related independent activities with the assumption that such time benefits all children, readers and non-readers alike. Countless programs tout the benefits of this quiet, student-managed reading time, and often bear catchy, presumably motivational names like D.E.A.R. ("Drop Everything And Read"). The findings of the present study offer a picture that contradicts the notion that time devoted to silent reading and other child-directed reading-related activities is universally beneficial.

The results of this study indicate that even well meaning teachers may inadvertently be helping the rich get richer. The broader significance of this finding is that instructional "forms" in any subject area may have these divergent effects. Researchers and teachers need to be aware

that not only *what* is taught but *how* it is taught may speak differently to children with different skills sets and backgrounds.

References

Adams, M.J. (1990). *Beginning to read: Thinking and learning about print.* Cambridge, MA: MIT Press.

Alexander, K.L., and Entwisle, D.R. (1988). Achievement in the first 2 years of school: Patterns and processes. *Monograph for the Society for Research in Child Development, 53* (2).

Evans, M.A. (1985). Impact of classroom activities on beginning reading development. In Carr, T.H. (Ed.) *The Development of Reading Skills: New Directions for Child Development, No. 27.* San Francisco, CA: Jossey-Bass.

Frese, M.K. (2000, April). Instructional emphasis in kindergarten and first grade classrooms. In F.J. Morrison (Chair), *Schooling and cognitive growth: Assessing the environment and its impact*. Symposium presentation at the biennial meeting of the Conference on Human Development, Memphis, TN.

Griffin, E.A. (2000, April). Through the looking glass: Measuring classroom instruction. In F.J. Morrison (Chair), *Schooling and cognitive growth: Assessing the environment and its impact*. Symposium presentation at the biennial meeting of the Conference on Human Development, Memphis, TN.

Griffin, E.A. and Morrison, F.J. (1997). The unique contribution of home literacy environment to differences in early literacy skills. *Early Child Care and Development, 127-128,* 233-243.

Juel, C., and Minden-Cupp, C. (1998). Learning to read words: Linguistic units and strategies. *CIERA Report #1-008.* Ann Arbor, MI: Center for the Improvement of Early Reading Achievement.

Markwardt, F. (1989). *Peabody Individual Achievement Test-Revised.* Circle Pines, MN: American Guidance Service.

Morrison, F.J., Griffith, E.M., Williamson, G., and Hardway, C.L. (1995). The nature and sources of early literacy. Paper presented at the biennial conference of the Society for Research in Child Development, Indianapolis, IN.

Thorndike, R.L., Hagen, E.P., and Sattler, J.M. (1986). *Stanford-Binet Intelligence Scale -- 4th Edition.* Chicago, IL: Riverside Publishing Co.

U.S. Department of Education, National Center for Education Statistics. (1999). *The 1998 NAEP Reading Report Card for the Nation.* NCES 1999-459, by Donahue, P.L., Voelkl, K.E., Campbell, J.R., and Masseo, J. Washington, D.C.: Author.

Williams, S.E. (2000). What did you learn in school today? The impact of instruction on cognitive growth. In F.J. Morrison (Chair), *Schooling and cognitive growth: Assessing the environment and its impact*. Symposium presentation at the biennial meeting of the Conference on Human Development, Memphis, TN.

Table 1
Observed Activities Included in Classroom Experience Variable

Student read aloud --- choral
Student read aloud --- individual
Silent sustained reading
Student independent writing
Student group writing
Teacher-directed group writing
Teacher model writing
Spelling
Alphabet activity
Letter sight/sound
Initial consonant stripping
Word segmentation
Vocabulary

Table 2
Background Characteristics by IQ Group

	Low IQ (IQ≤101)	High IQ (IQ>101)
Gender (0=female; 1=male)	.44 (.50)	.59 (.50)
Race (0=African American; 1=White)	.57 (.50)	.80 (.40)***
Maternal Education	15.34 (3.25)	16.58 (2.29)*
Home Literacy Environment	11.25 (3.43)	14.50 (2.15)***
IQ	89.59 (7.82)	114.48 (8.98)***
Fall Word Decoding (PIAT Reading Recognition)	19.28 (8.48)	26.30 (16.35)**

Table 3
Effect of Time Allotted for Reading Related Classroom Experiences on Growth in Word Decoding Skills

Low IQ group *(x=35.11, sd=13.24)*	B	SE B	Beta	$R^2\Delta$
Step 1				
Fall Word Decoding Skill Score	1.30	0.22	0.87	
IQ	0.08	0.22	0.05	
Race	-4.17	4.48	-0.17	
Gender	8.41	3.03	0.34	
Maternal Education	0.61	0.65	0.16	
Home Literacy Environment	0.25	0.53	0.07	.66
Step 2				
Classroom Experience	-0.03	0.09	-0.03	.001

High IQ group *(x=43.39, sd=15.91)*	B	SE B	Beta	$R^2\Delta$
Step 1				
Fall Word Decoding Skill Score	0.76	0.11	0.73	
IQ	0.00	0.24	0.00	
Race	-1.06	4.60	-0.03	
Gender	-5.98	2.99	-0.20	
Maternal Education	-1.00	0.82	-0.16	
Home Literacy Environment	0.07	0.72	0.01	.66
Step 2				
Classroom Experience	0.13	0.09	0.14	.02

Note: Results are from WLS forced-entry regression, with the classroom experience variable entered alone in the second step. Gender is coded as 0 for female; race is coded 0 for African American, 1 for White.

Table 4
Observed Activities Included in Teacher-directed and Child-directed Classroom Experience Variables

Teacher-directed Activities	Child-directed Activities
Student read aloud --- choral	Student read aloud --- individual
Teacher-directed group writing	Silent sustained reading
Teacher model writing	Student independent writing
Spelling	Student group writing
Alphabet activity	
Letter sight sound	
Initial consonant stripping	
Word segmentation	
Vocabulary	

Table 5
Effect of Time Allotted for Reading Related Classroom Experiences on Growth in Word Decoding Skills for High IQ Children

		B	SE B	Beta	$R^2\Delta$
Step 1					
	Fall Word Decoding Skill Score	0.75	0.11	0.72	
	IQ	0.05	0.23	0.02	
	Race	-0.21	4.41	-0.01	
	Gender	-6.74	2.85	-0.22	
	Maternal Education	-1.28	0.80	-0.21	
	Home Literacy Environment	-0.14	0.70	-0.02	.66
Step 2					
	Child-directed classroom activities	0.21	0.09	0.23	.05*

		B	SE B	Beta	$R^2\Delta$
Step 1					
	Fall Word Decoding Skill Score	0.79	0.11	0.76	
	IQ	-0.05	0.23	-0.03	
	Race	0.05	4.70	0.00	
	Gender	-7.35	3.10	-0.24	
	Maternal Education	-0.84	0.81	-0.14	
	Home Literacy Environment	0.16	0.72	0.02	.66
Step 2					
	Teacher-directed classroom activities	-0.18	0.16	-0.12	.01

Note: Results are from OLS forced-entry regression, with the classroom experience variable entered alone in the second step. The significance levels of $R^2\Delta$ are indicated as $*p \leq .05$. Gender is coded as 0 for female; race is coded 0 for African American, 1 for White.

Table 6
Effect of Time Allotted for Reading Related Classroom Experiences on Growth in Word Decoding Skills for Low IQ Children

		B	SE B	Beta	$R^2\Delta$
Step 1					
	Fall Word Decoding Skill Score	1.24	0.21	0.82	
	IQ	0.18	0.22	0.12	
	Race	-4.63	4.30	-0.19	
	Gender	7.64	2.95	0.31	
	Maternal Education	0.56	0.62	0.15	
	Home Literacy Environment	0.31	0.51	0.09	.66
Step 2					
	Child-directed classroom activities	-0.14	0.09	-0.18	.03

		B	SE B	Beta	$R^2\Delta$
Step 1					
	Fall Word Decoding Skill Score	1.16	0.21	0.77	
	IQ	0.20	0.20	0.13	
	Race	-6.76	4.20	-0.27	
	Gender	6.99	2.82	0.28	
	Maternal Education	0.73	0.59	0.19	
	Home Literacy Environment	0.31	0.48	0.09	.66
Step 2					
	Teacher-directed classroom activities	0.37	0.15	0.28	.06*

Note: Results are from WLS forced-entry regression, with the classroom experience variable entered alone in the second step. The significance levels of $R^2\Delta$ are indicated as $*p \leq .05$. Gender is coded as 0 for female; race is coded 0 for African American, 1 for White.

Figure 1
Growth in Word Decoding Skill as a Function of Time Devoted to Teacher-Directed Reading Related Activities for High and Low IQ Children

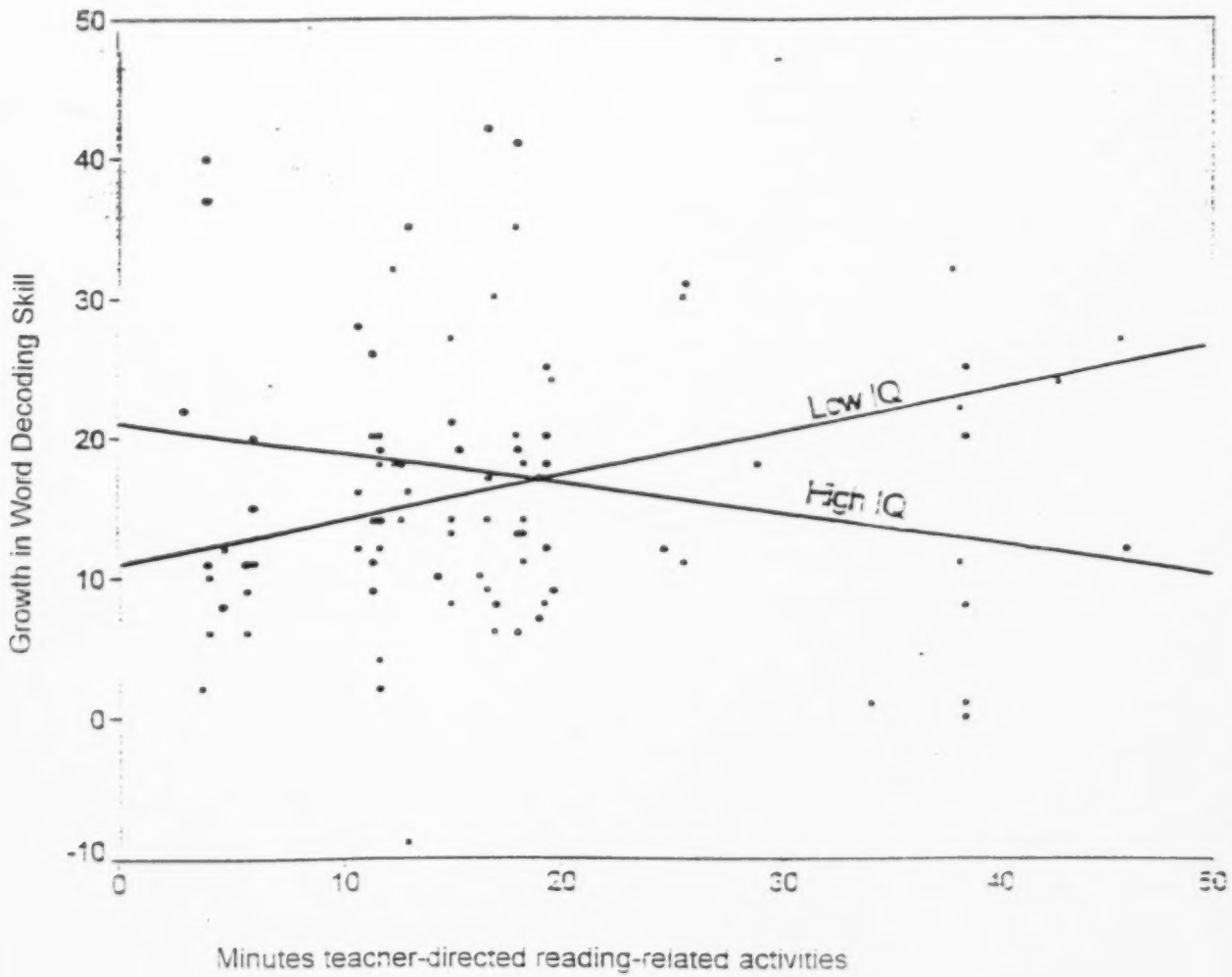

Figure 2
Growth in Word Decoding Skill as a Function of Time Devoted to Child-Directed Reading Related Activities for High and Low IQ Children